Journal of

Microscopy

P. Echlin, C. B. Carter, A. Entwistle,
K. L. Klomparens, K. M. Knowles, T. Mattfeldt,
J. B. Pawley, D. B. Williams, T. Wilson

Volume 176 1994

© 1994 The Royal Microscopical Society

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by The Royal Microscopical Society for libraries and other users registered with the Copyright Clearance Center (CCC), Transactional Reporting Service, provided that the stated fee of $10.50 per copy is paid directly to the CCC, 222 Rosewood Drive, Suite 910, Danvers, MA 01923, U.S.A. Special requests should be addressed to the Editor. *Journal of Microscopy* 0022-2720/94 $10.50.

Published by Blackwell Scientific Publications Ltd
Osney Mead, Oxford OX2 0EL, U.K.
25 John St., London WC1N 2BL, U.K.
23 Ainslie Place, Edinburgh EH3 6AJ, U.K.
Suite 500, 5th Floor, 238 Main St., Boston, MA 02142, U.S.A.
54 University St., Carlton, Victoria 3053, Australia
Librairie Arnette SA, 2 rue Casimir-Delavigne, 75006 Paris, France
Blackwell Wissenschaft-Verlag, Dusseldorfer Strasse 38, D-10707, Berlin, Germany
Blackwell MZV, Feldgasse 13, A-1238 Vienna, Austria

ISSN 0022-2720

Printed in Great Britain by the Alden Press, Oxford

Blackwell Scientific Publications
OXFORD LONDON EDINBURGH BOSTON
MELBOURNE PARIS BERLIN VIENNA

Contents

Part 1 October 1994

Review

R. S. CAMPLEJOHN. The measurement of intracellular antigens and DNA by multiparametric flow cytometry, 1

D. J. MASON, R. ALLMAN, J. M. STARK AND D. LLOYD. Rapid estimation of bacterial antibiotic susceptibility with flow cytometry, 8

A. C. PINDER AND R. G. MCCLELLAND. Rapid assay for pathogenic salmonella organisms by immunofluorescence flow cytometry, 17

P. WEDEKIND, U. KUBITSCHECK AND R. PETERS. Scanning microphotolysis: a new photobleaching technique based on fast intensity modulation of a scanned laser beam and confocal imaging, 23

G. A. IRDI AND H. B. BOOHER. Light microscopical evaluation of pyrite oxidation of heap leached samples from a Pittsburgh seam coal, 34

S. H. STOBBS, D. L. MEDLIN, M. J. MILLS AND W. M. STOBBS. A comparison of the analysis of the Fresnel constrast in high- and low-resolution images for the characterization of the rigid body displacements at a grain boundary, 45

M. PANCORBO, E. ANGUIANO AND M. AGUILAR. Fractal characterization by frequency analysis: III. Effect of noise, 54

Y. KINJO, K. SHINOHARA, A. ITO, H. NAKANO, M. WATANABE, Y. HORIIKE, Y. KIKUCHI, M. C. RICHARDSON AND K. A. TANAKA. Direct imaging in a water layer of human chromosome fibres composed of nucleosomes and their higher-order structures by laser-plasma X-ray contact microscopy, 63

Short technical note

J. H. TUCKER, R. DYE, J. SPREY, C. SOWTER, E. GRAY AND G. BRUGAL. Relocation accuracy on HOME computerized microscopes, 75

Book reviews, 83

Part 2 November 1994

C. E. LYMAN, J. I. GOLDSTEIN, D. B. WILLIAMS, D. W. ACKLAND, S. VON HARRACH, A. W. NICHOLS AND P. J. STATHAM. High-performance X-ray detection in a new analytical electron microscope, 85

D. B. LAZOF, J. K. G. GOLDSMITH, T. W. RUFTY, C. SUGGS AND R. W. LINTON. The preparation of cryosections from plant tissue: an alternative method appropriate for secondary ion mass spectrometry studies of nutrient tracers and trace metals, 99

B. J. BATTERSBY, J. C. W. SHARP, R. I. WEBB AND G. T. BARNES. Vitrification of aqueous suspensions from a controlled environment for electron microscopy: an improved plunge-cooling device, 110

T. MARIANI, A. MUSIO, C. FREDIANI, I. SBRANA AND C. ASCOLI. An atomic force microscope for cytological and histological investigations, 121

E. KELLENBERGER AND C. KELLENBERGER-VAN DER KAMP. Unstained and *in vivo* fluorescently stained bacterial nucleoids and plasmolysis observed by a new specimen preparation method for high-power light microscopy of metabolically active cells, 132

F. B. REITZ AND L. PAGLIARO. Fibre optic scrambling in light microscopy: a computer simulation and analysis, 143

C. M. KENYON, M. YANAI AND P. T. MACKLEM. Edge detection, three-dimensional cell boundary reconstruction and volume and surface area estimation from differential interference contrast images, 152

A. J. EINSTEIN, J. BARBA, P. D. UNGER AND J. GIL. Nuclear diffuseness as a measure of texture: definition and application to the computer-assisted diagnosis of parathyroid adenoma and carcinoma, 158

R. BRÉMOND, D. JEULIN, P. GATEAU, J. JARRIN AND G. SERPE. Estimation of the transport properties of polymer composites by geodesic propagation, 167

Part 3 December 1994

Editorial, 179

M. WAGNER, B. AßMUS, A. HARTMANN, P. HUTZLER AND R. AMANN. *In situ* analysis of microbial consortia in activated sludge using fluorescently labelled, rRNA-targeted oligonucleotide probes and confocal scanning laser microscopy, 181

R. JUŠKAITIS AND T. WILSON. Scanning interference and confocal microscopy, 188

S. ANDERSSON-ENGELS, I. ROKAHR AND J. CARLSSON. Time- and wavelength-resolved spectroscopy in two-photon excited fluorescence microscopy, 195

S. MESCHINI, A. MOLINARI, A. CALCABRINI, G. CITRO AND G. ARANCIA. Intracellular localization of the antitumour drug adriamycin in living cultured cells: a confocal microscopy study, 204

J. BRADL, M. HAUSMANN, B. SCHNEIDER, B. RINKE AND C. CREMER. A versatile 2π-tilting device for fluorescence microscopes, 211

P. E. HÄNNINEN, E. SOINI AND S. W. HELL. Continuous wave excitation in two-photon fluorescence microscopy, 222

H. JACOBSEN, P. HÄNNINEN, E. SOINI AND S. W. HELL. Refractive-index-induced aberrations in two-photon confocal fluorescence microscopy, 226

U. C. FISCHER, J. KOGLIN AND H. FUCHS. The tetrahedral tip as a probe for scanning near-field optical microscopy at 30 nm resolution, 231

O. TREPTE, I. ROKAHR, S. ANDERSSON-ENGELS AND K. CARLSSON. Studies of porphyrin-containing specimens using an optical spectrometer connected to a confocal scanning laser microscope, 238

W. WEISE, P. ZININ AND S. BOSECK. Modelling of inclined and curved surfaces in the reflection scanning acoustic microscope, 245

D. RICCI AND M. GRATTAROLA. Scanning force microscopy on live cultured cells: imaging and force-versus-distance investigations, 254

F. A. MERCHANT, S. J. AGGARWAL, K. R. DILLER AND A. C. BOVIK. *In-vivo* analysis of angiogenesis and revascularization of transplanted pancreatic islets using confocal microscopy, 262

H. U. DANZEBRINK. Optoelectronic detector probes for scanning near-field optical microscopy, 276

C. CULLANDER. Imaging in the far-red with electronic light microscopy: requirements and limitations, 281

K. CARLSSON, N. ÅSLUND, K. MOSSBERG AND J. PHILIP. Simultaneous confocal recording of multiple fluorescent labels with improved channel separation, 287

Author index, 300

Key-word index, 301